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Defining a Conceptual Framework for Telework Research

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Abstract

Telework is a workplace arrangement in which employees have some degree of flexibility in work location and hours. The term 'Telework' was first coined in the 1970's to describe situations where information and communication technologies were used to support work activities undertaken away form the traditional office-based workplace. The subsequent three decades have seen many published reports on the issues surrounding Telework adoption and use. However much of this research has only examined the advantages and disadvantages of Telework use and has not adopted broader research perspectives to examine the deeper issues and the roles played by the various affected stakeholder groups. Over the same period, the incidence of Telework has increased significantly. The motivation for this paper is to develop a conceptual model capable of providing clear direction for research into the adoption and use of Telework. We then examine the usefulness of this model by identifying and framing a series of research projects aimed at addressing some of the existing gaps in the literature concerning Telework impacts.

Keywords

Telework, research model, systems

Introduction

Organisations rely on information and communication technology (ICT) to support work activities and collaboration between geographically separated workplaces. Through this usage, ICT has enabled new organisational structures and business process designs that offer previously unavailable flexibility in when and where work is performed.

In 2005 the Department of Communications, Information Technology and the Arts (DCITA) set up a committee (The Australian Telework Advisory Committee) to review Telework as part of the initial election commitment to establish a Telework and home based business taskforce to advise Government on options and impediments to the development of Telework for employees and businesses. While there were a variety of definitions for Telework practice, the Australian Telework Advisory Committee (DCITA 2006) adopted the following broad categories of Telework activity:

- Home-based employed Teleworkers who work from home either on a full-time or part-time basis;
- Home-based self-employed Teleworkers who normally work from a home office;
- Mobile Teleworkers who spend at least 10 hours per week away from their main workplace; and
- Day extenders who work full-time from a traditional office-based work environment, but occasionally work at home after work hours.

Telework facilitates changes in the temporal-spatial structure of an organisation by allowing work activities to be performed at locations other than the traditional office, and at times outside of what might be considered normal working hours (Kompast and Wagner 1998). The incidence of Telework is significant and continues to increase. This is particularly the case throughout the accounting and financial services sectors (Hunton 2005, Phelan 2002). While Telework provides a means of leveraging the intellectual capital of an organisation, effective implementation requires that organisations consider the impact of Telework on workflow and task designs, and also how individuals and workgroups should be managed in these new work environments (Mouritsen et al. 2001). While economic considerations are generally an important driver for the adoption of workplace technologies, it is also important to consider the legal, ethical, and human issues associated with technologically-enabled workplace flexibility.

As Telework use gains wider acceptance, stakeholders and researchers will need to understand the organisational and environmental factors that will affect its success or failure. The following section briefly

discusses existing research frameworks for Telework. An alternative model is then proposed and used to position an agenda for future research.

Existing Conceptual Frameworks for Understanding Telework

While the advantages and disadvantages for employers and employees are of central importance in the adoption of Telework, other factors have been shown to have important influence on outcomes. Previous research shows that successful Telework adoption requires new approaches to managing individuals, teams, information, processes and technologies (Davenport and Pearlson, 1998). In particular, the importance of establishing a sound working relationship between Teleworkers, non-Teleworking employees and managers cannot be understated (Guimaraes and Dallow, 1999; Reinsch, 1997). In other studies, economic factors such as increased productivity or cost reductions are cited as the main organisational drivers for Telework adoption (see Hill et al., 1998; Watad and DiSanzo, 2000; Wustemann, 1999). Not surprisingly, the greatest economic impacts are seen to come where there are highly structured and repetitive work tasks and the benefits are easily measured (DuBrin, 1991).

Alternative conceptual models for Telework adoption and utilisation have been proposed in the literature. Some of these models focus on the relationship between different Telework work configurations and employee attitudes and behaviours (Feldman and Gainey, 1997; Shamir and Salomon, 1985, Hunton and Harmon, 2004). While others have adopted a supply/demand approach (Gray, 1997), or emphasised the relationship between different Telework practices and organisational outcomes (Belanger and Collins, 1998).

More recently, Siha and Monroe (2006) have proposed a research model that identified key factors following an extensive review of the Telework literature (see Figure 1). The Siha and Monroe model follows a top-down perspective beginning with a strategic organisational dimension that is influenced by the regulatory and competitive environment within which an organisation operates. This strategic view is tempered by employee support and management support for Telework and is premised on the existence of appropriate technologies to support telecommunication activities. In the Siha and Monroe model, competition and government regulation provide the impetus for organisations to consider Telework strategies. The success of Telework adoption is determined by how well an organisation performs against the following criteria:

- Regulatory Compliance - legislation and compliance issues; OHS issues and legislative variations between states and territories; ownership of information; Security and other organisational risks.
- Positive Environmental Impact – reduction in travel leading to less pollution and traffic congestion; Location of organisation and other Industry factors.
- Productivity Increases and Cost Reductions - workplace flexibility as a means of attracting and retaining staff; travel and office space savings; possible improved response to clients; insurance implications and trade-offs; monitoring and supervision of Teleworkers; development of effective workgroups; planning and management strategies.
- Worker Satisfaction, Flexibility, Work/Life Balance - workplace flexibility; alienation; task performance (type, quantity, quality, frequency, etc.); social presence and influence; new ways of organising work; and work expectations.

However there are several substantive problems with this model:

- An organisation's Telework may not follow a rational decision-making process and may evolve from within the organisation or emerge rapidly due to other external events such as an act of terrorism or natural disaster.
- There is a lack focus on the human challenges of increased Telework. Particularly in how management and Telework activities could be supported.
- The criteria for successful Telework adoption are not generic and may change over time and are reliant on stakeholder perspectives that are not well-defined.

While these earlier attempts to develop research models for Telework have provided useful guidance, to date no single model has emerged that provides an adequate theoretical basis for understanding Telework adoption. Although the Siha and Monroe model is the most recent attempt, it has a narrowly defined view of Telework success and it would be difficult to extend the model to answer other kinds of research questions, or problems that rely on other performance criteria. In the following section we propose an alternative research framework

that aims to address this deficiency by proposing a research framework based on the structural aspects of Telework adoption as reflected by the drivers, processes and outcomes identified in the literature.

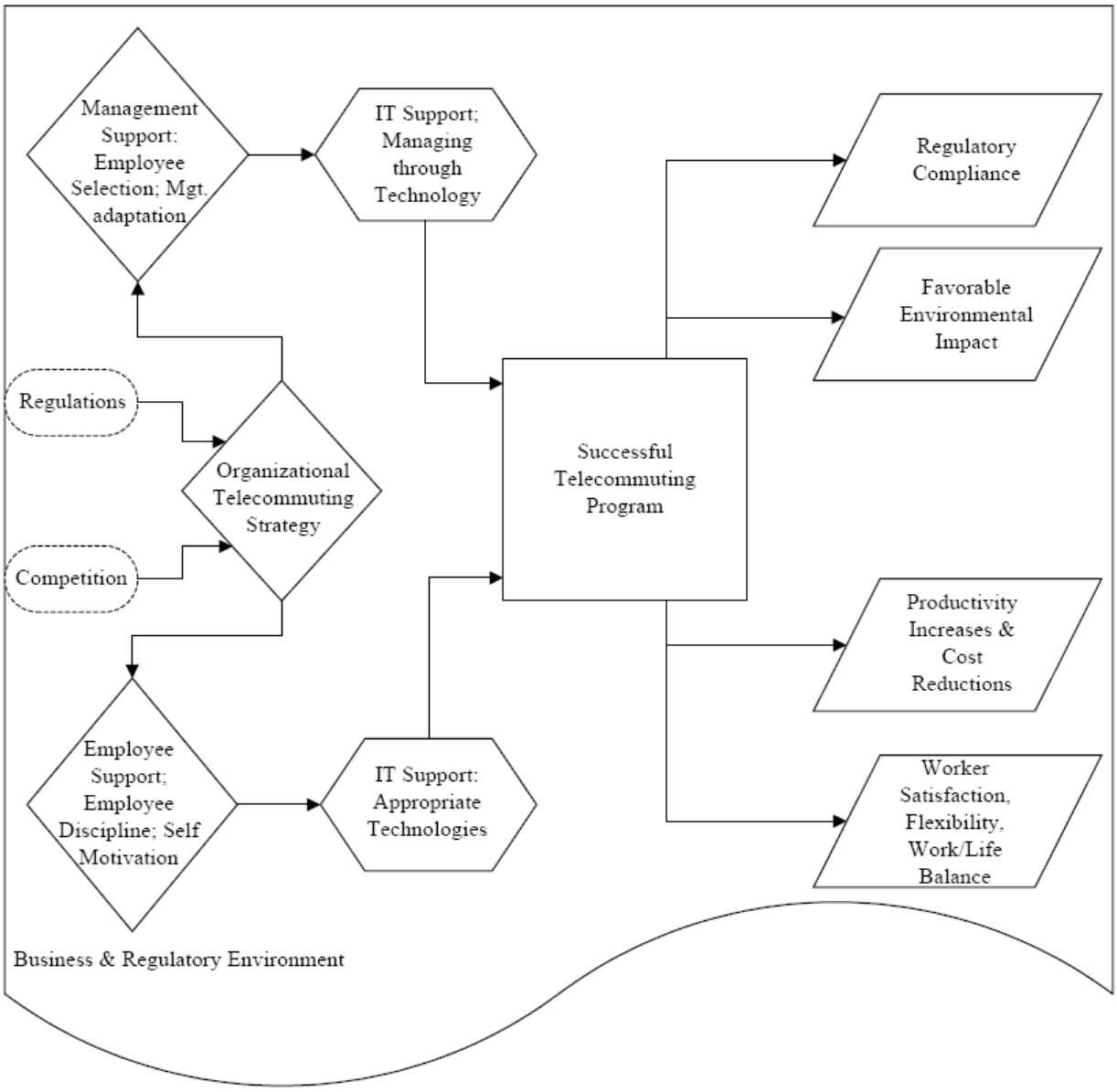

Figure 1: Telework/telecommuting success model - Source: Siha and Monroe (2006:472)

Proposed Framework for Telework Research

Despite a significant effort over an extended time period, the absence of an appropriate research model for Telework has diminished the theoretical and practical value of earlier research (Bailey and Kurland, 2002; McCloskey and Igbaria, 1998). This problem is compounded by the multiplicity of Telework activities and organisational configurations that exist in practice, and the socio-technical nature of Telework as both shaped by and re-shaping human actions and social structures. In contrast to earlier research frameworks, the construct components proposed in our model are based on the fundamental structural elements of Telework adoption system – motivation (**Telework Drivers**), activities (**Telework Processes**) and consequences (**Telework Outcomes**). The composite elements of this model are illustrated in Figure 2 and described in more detail below.

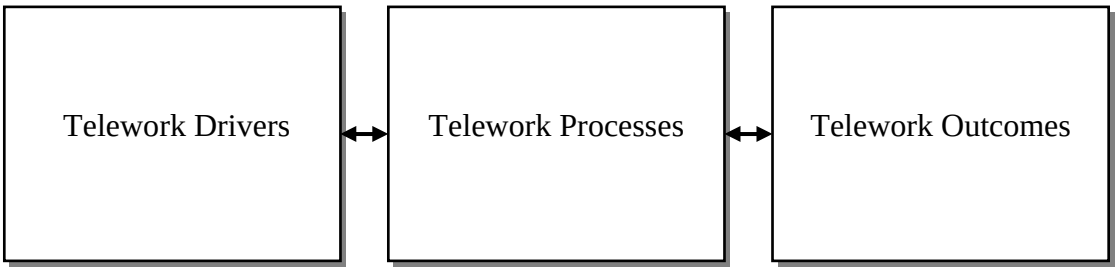

Figure 2: Generic systems-based model of Telework adoption and utilisation

The factors that influence the adoption and use of Telework are described in Figure 3. These *Telework Drivers* are interrelated and capture the motivating influences for adopting Telework. These Drivers can be expected to either directly or indirectly affect the type of Telework practices to be adopted. In many ways these drivers are a given and should appear to be relatively stable over time, but can on occasion be subject to sudden change due to a market shock or some other abnormal event. For example, a change in legislation, civil disorder, a sharp rise in fuel prices, or a greater awareness of environmental issues. The three drivers for Telework adoption are:

- ***Organisational factors*** – these can include the availability of skilled staff, regulatory obligations, strategic direction, corporate social responsibility, level of competition within the industry, organisational restructuring, etc. These factors will determine the likely level of formal support for Telework within an organisation.
- ***Industry work practices*** – these include industry competitive forces, regulatory intervention, traditional industry work practices, etc.
- ***Employee preferences*** – employee life-stage (for example, young family or transition to retirement), an ability or desire to work remotely, personal sense of social responsibility, need for visibility, etc.

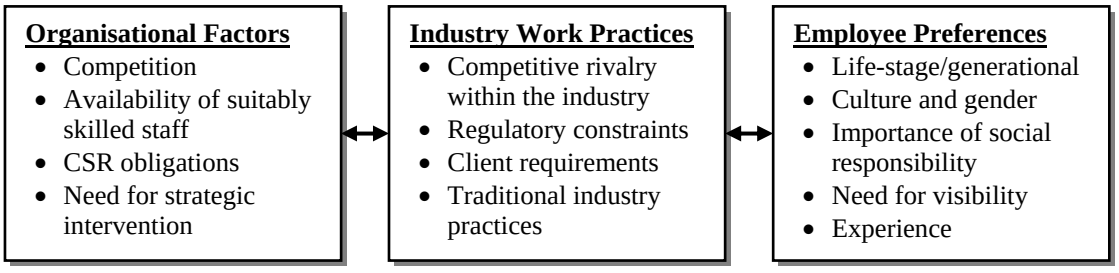

Figure 3: Telework Drivers

Telework Processes relate to the actual Telework activities that are performed within or on behalf of the organisation and are briefly described in Figure 4. Telework requires support from both management and employees, but the overall effectiveness of these activities will be highly dependent on the availability of appropriate technologies and governance mechanisms. Management support includes the re-design of business processes to allow the benefits of Teleworking to be achieved while managing risk and quality. Employee support centres on the capability and attitude of the employee and the scope for Teleworking processes to address alienation and facilitate creativity.

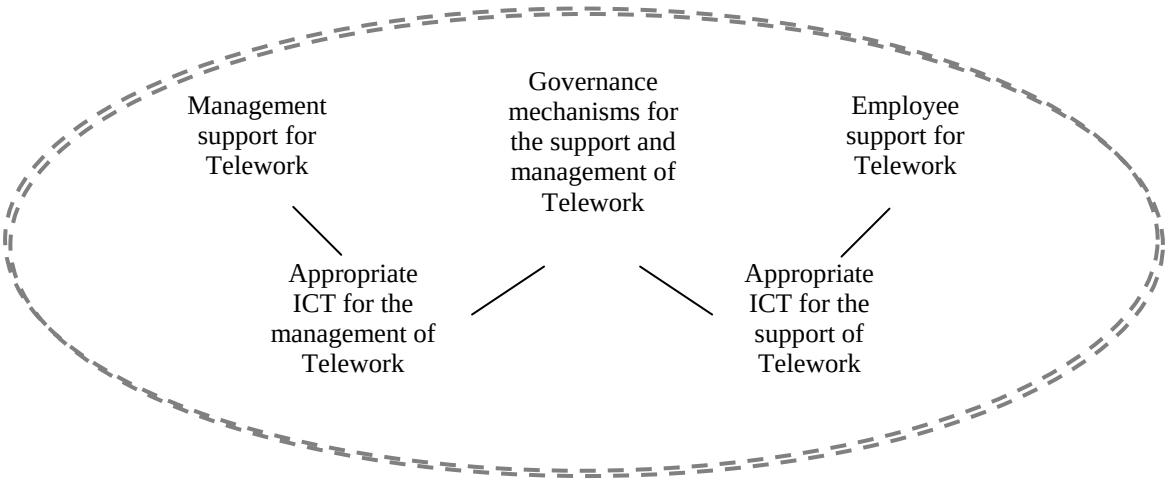

Figure 4: Telework Processes

Information and communication technologies present a host of new possibilities in how work is organised. The Australian Federal Government's recently released Intergenerational Report 2 (IGRvII 2007) highlights the importance of managing future skill shortages and declining GDP growth by encouraging higher participation rates. Telework is one way of enabling skilled workers to remain in the workforce beyond traditional retirement age. An examination of the broader literature on Telework and telecommuting indicates that the impacts are likely to be broad with far reaching effects on employees, organisations and the wider community. Consequently *Telework Outcomes* capture the impact of Telework adoption on society, the organisation, and the employees (SUSTEL 2004) and are illustrated in Figure 5. These impacts are:

- ***Societal impact*** – regulatory compliance, corporate social responsibility and obligations, environmental outcomes, external economies through emission reductions, space savings, etc.
- ***Organisational impact*** – these include productivity and cost changes, flexibility, regulatory compliance, the response of customers and other value chain impacts.
- ***Employee impact*** – employee satisfaction, flexibility, work/home life balance, reduction in travel times, regulatory compliance, implications for career, and issues of equity and access.

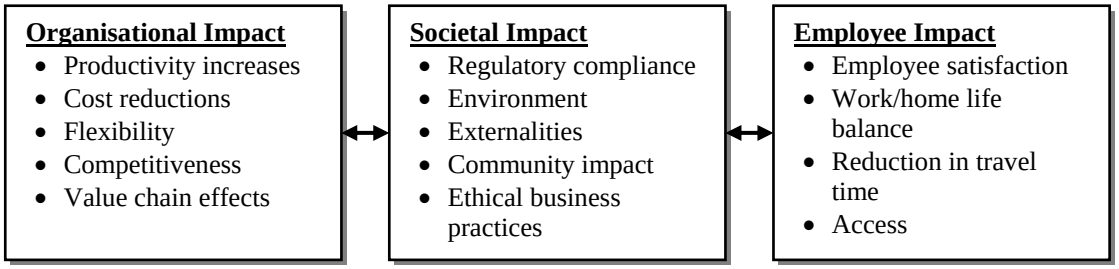

Figure 5: Telework Outcomes

Finally we can combine these three distinct aspects of Telework so as to present the conceptual model depicted in Figure 6. In the following section, we briefly discuss an agenda for future research that focuses the Telework impacts aspects.

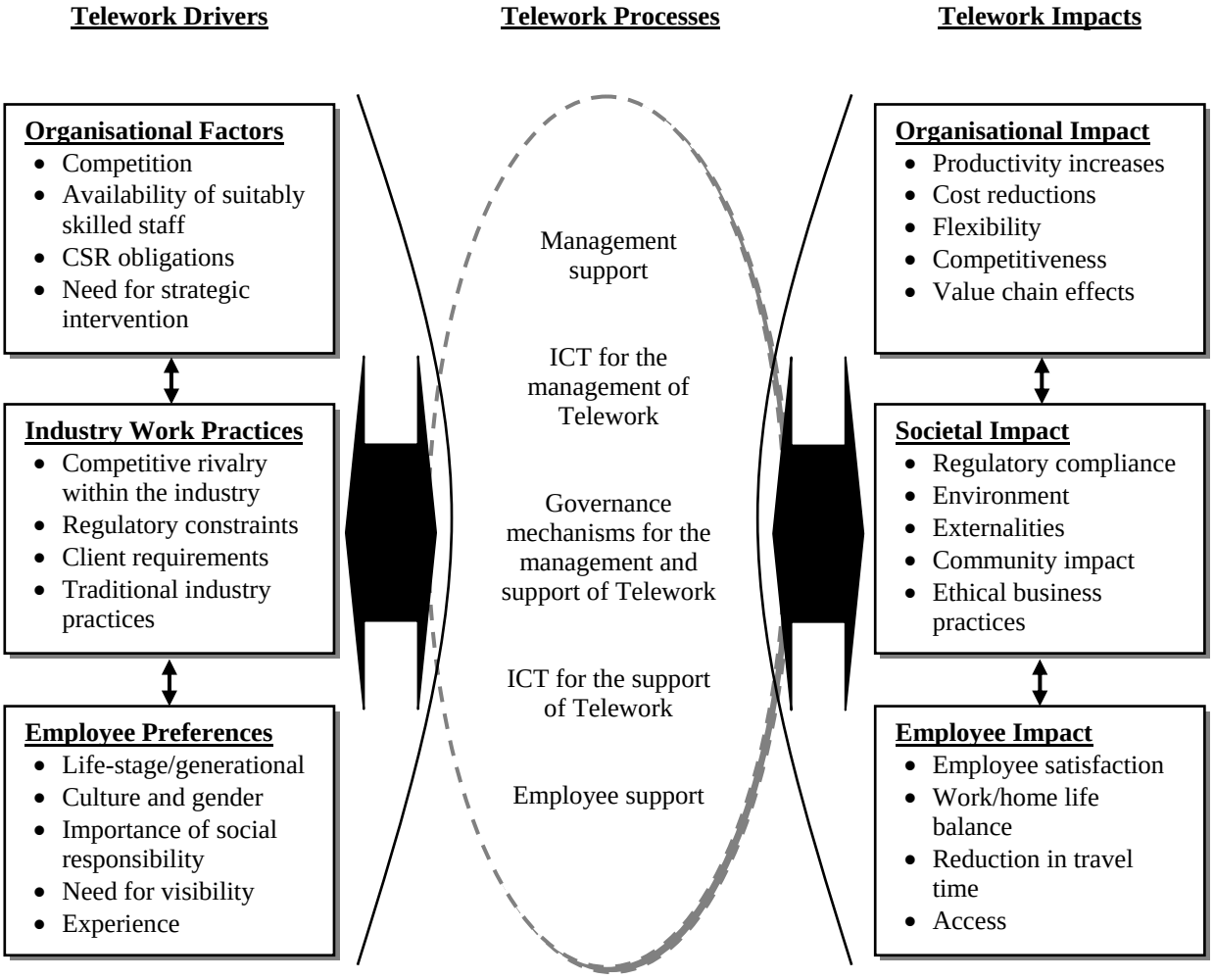

Figure 6: Systems-based framework for understanding Telework adoption and use

An Agenda for Telework Research

The workplace and organisational issues surrounding Telework use span areas of strategic importance to organisations particularly in the articulation of enterprise development strategies. The introduction of Telework practices also has implications for corporate social responsibility and sustainable development and as an incentive for staff recruitment and retention in tight employment markets. The model presented in Figure 6 identifies the main causal relationships associated with Telework usage and therefore provides a major point of reference for future research. We will now examine four major research programs in relation to Telework impacts component of this model. Each research project reflects a critical topic area for Telework adoption and has been identified from existing gaps in the literature. The four research programs themselves are briefly summarised below. The alignment of the proposed research projects and the major impacts of Telework identified using the Telework framework are presented in Table 1.

- ***Workplace flexibility***
  The focus of this research program is how Telework is currently used within service-based organisations. The major objective is to reveal how professional employees can be effective participants in the implementation and use of Telework.

- ***Regulatory environment for Telework***
  The objective of this research program is to assess the different state and federal regulatory environments and their impact on Telework practices. A major research task is the identification of regulatory pitfalls that should be avoided and to assess the state of practice in meeting these regulatory responsibilities, and identify regulatory deficiencies. This research program may also identify

applications where the adoption of Telework can help an organisation and its clients achieve corporate social responsibility objectives.

- ***Workplace flexibility as a staff recruitment and retention strategy***
  The main aim of this research program is to examine how Telework might be used as a strategy for recruiting and retaining staff in competitive employment environments. In many professional occupations, it has become difficult for many organisations to attract and retain qualified staff. Telework provides alternative work structures that may have more appeal to certain sections of the workforce. For example, family responsibilities or illness that might otherwise prevent some employees from a quick return to a traditional office work environment. Also there might be generation specific circumstances where some employees may prefer to make a gradual transition to retirement, or where younger employees have an expectation of a flexible work environment.

- ***Assessing the business and IT processes necessary for effective Telework***
  This research program aims to identify the business, technological and workplace alignment issues that are required to gain value from Telework practices in terms of productivity, costs and other relevant organisational factors. Little is known about the governance and change management strategies required by an organisation considering a transition from a traditional face-to-face office workplace to a more intensive ICT enabled flexible working environment.

Table 1: Research program alignment with the Telework impacts and related issues identified in Figure 6

Telework Research Programs	**Telework Impacts**		
	Organisational Impact	**Societal Impact**	**Employee Impact**
1. Workplace flexibility	• Productivity and cost factors • Impact on customers • Key technologies	• Role of Telework in meeting CSR targets and/or obligations • Regulatory landscape	• Staff retention and recruitment • Access policies • Impact on Work/home life balance
2. Regulatory environment for Telework	• Regulatory constraints and their impact on productivity and costs • Impact on value chain	• Organisational CSR obligations • Regulatory environments • Impact on value chain •	• Regulatory constraints and their potential impact on employees and their families
3. Workplace flexibility as a staff recruitment and retention strategy	• Win/win situations for employees and employers from the adoption of Telework • Reductions in travel time and associated costs	• Benefits from adopting environmentally responsible workplace practices • Regulatory restraints and obligations for employees and employers	• Identify benefits that are of value to employees • Different needs such as generation X/Y, transition to retirement, etc.
4. Assessing the business and IT processes necessary for effective Telework programs	• Effective governance models and management strategies • Key technologies • Impact on customers	• Opportunities to achieve CSR objectives • Identify the potential for responsible change to industry practice	• Impact of changed workplace practices on employees and their families • Strategies that have win/win outcomes

Conclusion

Much of the existing research of Telework adoption and use merely examines the advantages and disadvantages and has not adopted a broader research perspective to examine the deeper issues and the role of various

stakeholder groups. The motivation for this paper was to develop a conceptual model capable of providing clear direction for future research into the adoption and use of Telework. We then examine the usefulness of this model by identifying and framing a series of research projects aimed at addressing some of the existing gaps in the literature about Telework impacts.

The benefits offered by our research model over earlier attempts are:

- The model provides a concise causal model of the structural factors associated with Telework use within organisations.
- The model is generic enough to study the dynamics of Telework adoption and use in a wide range of workplace settings.
- The model components (drivers, activities and outcomes) provide broad categories capable of accommodating the multiplicity of variables identified within the literature.
- The model is robust enough to be used in its entirety or in its component parts of drivers, activities and outcomes to examine the specific impacts of Telework adoption.

The research-program alignment grid provided in Table 1 illustrates the viability of our conceptual model for conducting Telework related research. Most importantly, we have demonstrated how this research framework can illuminate some of the potential impacts that are embedded within societal, organisational and employee outcomes.

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